APPENDIX A

Robb/Ledford Wildlife Management Area Management Plan

DESCRIPTION OF AREA

The Robb/Ledford WMA (WMA) is located in Madison and Beaverhead Counties in Southwestern Montana (Figure 1). It is situated on the western slopes of the Snowcrest Mountains approximately 20 miles south of Alder, Montana, along the Robb and Ledford Creek drainages of the Ruby River. This WMA borders the Beaverhead National Forest (BNF), Bureau of Land Management (BLM), Department of Natural Resources (DNRC), Montana Fish, Wildlife & Parks (FWP), Blacktail WMA, and private lands in Madison and Beaverhead Counties south of Alder, Montana.

The area ranges in elevation from approximately 6000 feet along Ledford and Robb Creeks to 9200 feet on the upper reaches of the WMA. The basic character of the land involves open rolling rangelands intersected with perennial streams and a small amount of timber in the upper reaches. Rangelands are grass and grass-shrub mixes with timber primarily Douglas fir.

Average annual precipitation is 15-20 inches, much of which occurs in the form of snow. The soil type is Underwood-Babb. Some rock outcrops exist, but soil is generally free of gravel to depths of 6-12 inches.

The WMA was purchased in one acquisition. The total deeded acreage of the WMA is 17,291 acres. Along with the purchase, FWP acquired a lease of 10,818 acres of DNRC land within the WMA. In addition, there are 6,802 acres of BLM land associated with the WMA. The entire area associated with the WMA then, is 34,911 acres.

HISTORY OF AREA

The WMA was acquired in July 1988 from the Rocky Mountain Elk Foundation. The Rocky Mountain Elk Foundation (RMEF) acquired the property from the Ledford Creek Grazing Association the same year, acting as an intermediary until FWP was able to purchase the land using Habitat Montana dollars.

At the time FWP purchased the WMA the Association retained grazing rights for 16,000 animal unit months (AUM) from May 1 through November 30 annually for three years (1988-1990). These grazing rights were compensation for the mineral rights granted in the sale of the WMA. These grazing rights expired on November 1, 1990. Since that time, the Association has leased the grazing privileges under a rest rotation grazing formula from June 15 through October 15 each year. This grazing has been leased for a fee based on fair market value. This lease has expired each year on October 15.

The Association also holds permits for grazing on three federal livestock allotments. These are directly adjacent to the WMA on Forest Service land to the east, and on BLM and Forest Service land to the south, adjacent to the Blacktail WMA.

From about 1958 to 1988, the previous owners grazed about 2200 cow/calf pairs on the range associated with the WMA. This use occurred on an annual basis and followed a semi-regular schedule which involved using the same pastures at the same time each year. Grazing occurred generally from early May through November every year. In addition, during the majority of the previous ownership, several hay meadows along Robb and Ledford Creeks were irrigated for cattle grazing. This continued until the latter 1980's when the irrigation ceased. Prior to the previous ownership then, it is evident that these meadows were probably harvested for hay.

PHYSICAL DEVELOPMENTS

Buildings and Structures: The buildings on the WMA include several on Robb Creek that were the old Ledford Creek Grazing Association (Association) headquarters. Currently, these are used to provide quarters for a summer rider for the Association, which is presently grazing the WMA. Some of the buildings also provide storage for this rider and for the field crews from FWP that perform maintenance activities on the WMA. There are also corrals at this location for the horses, which are used by the rider for managing livestock on the WMA. There are also some buildings and corrals on Ledford Creek, which are not used by FWP. Some other corrals in the middle of the WMA are used by the Association grazing the WMA for purposes of sorting their cattle and separating the calves prior to their shipping calves' home.

Canals and Ditches: Existing canals and ditches have been abandoned for irrigation purposes.

Bridges, Culverts and Cattleguards: Several of these structures exist on the WMA in various locations and all will be maintained.

Roads and Trails: Several miles of roads and trails exist on the WMA. These will be monitored to identify problems with erosion and corrective action will be taken as appropriate. Many old roads and trails have been closed to motorized use and are becoming revegetated naturally.

Public Use Facilities: There are no public use facilities on the WMA and commercial development is prohibited by law.

Signs: Boundary signs have been placed along exterior boundaries. Annual maintenance will be conducted on these signs as fences are checked each spring. Additionally, road designation signs have been put up to help recreationists identify open and closed roads and trails and will be checked annually. Special seasonal closure and entrance signs have also been constructed and will be maintained.

Fences: Many miles of fences exist on the WMA. When a permanent grazing system is established some of these may be used and others will need to be removed. Necessary existing fences now and in the future will be maintained annually as needed.

VEGETATION

Bluebunch wheatgrass and Idaho fescue grasslands is the predominant vegetation with some Douglas fir occurring at higher elevations. Sagebrush (both big sage and black sage), rabbitbrush, and mountain mahogany occur in association with these grass species. Willow stands are common along stream courses and in wet areas. Scattered patches of aspen and serviceberry can be found on the more mesic sites.

FWP has made no herbaceous seedings and has no plans to do any seeding. However, some smooth brome and timothy persists in areas that were formerly hayed.

TRAVEL MANAGEMENT

The travel plan for the WMA was last updated in 1996. Travel restriction updates on the WMA are coordinated through planning of the Interagency Visitor map for Southwest Montana produced by the BNF. This travel plan is updated approximately every three years. Consult the latest Travel Plan map for the latest travel restrictions. The Fish, Wildlife and Parks Commission establish rules and regulations for access on the WMA. Presently the WMA is closed to all public use each year from December 2 through May 15. However, county roads that exist through the WMA are open year-long.

WILDLIFE

ELK

The WMA was the first acquisition by FWP using Habitat Montana (HB526) funds raised through the sale of big game combination licenses, both nonresident and resident. It was acquired primarily as an elk winter range. At the time of FWP's acquisition, a wintering population of 500-800 elk were found on and adjacent to the WMA, and this remains the number of wintering elk in the area. Depending on winter conditions and elk distribution, a larger number of elk can be found on and adjacent to the WMA as a part of the approximately 3000 elk that winter in the larger area including the Robb/Ledford and Blacktail WMA's.

This elk population principally summers in the Gravelly and Snowcrest Mountains on the BNF. However, the bulk of the elk winter range occurs on the Robb/Ledford and Blacktail WMA's. Therefore, acquisition of the WMA secured a very important link in the seasonal distribution chain of this elk herd. Seasonal elk distribution data are summarized in annual progress reports by Hamlin and Ross (1996).

DEER

Mule and whitetail deer spend spring, summer and fall on the WMA. In addition, the WMA serves as part of a major winter range to a wintering mule deer population from the Snowcrest

Mountains. Recent trend surveys for this area put the population at approximately 700-800 animals ranging in the last ten years from approximately 600 to 1300.

MOOSE

Prior to 1972, an estimated 10 to 35 moose resided on or near the WMA. While riparian areas are recovering from long-term continuous grazing, moose populations have not recovered to their levels of 20 years ago.

ANTELOPE

There is a large population of antelope in the hunting district that encompasses the WMA, the largest district in the Region. A large segment of this population uses the WMA yearlong but most significantly as winter range on portions of the WMA.

GAME BIRDS

Blue grouse, sage grouse, occasional ruffed grouse and Hungarian partridge exist on the WMA and will benefit from improved range condition on the WMA. No population estimates have been made, but all species will undoubtedly benefit from the increased food and cover afforded the WMA as range condition improves.

WATERFOWL

Some waterfowl nesting occurs along the numerous beaver dams located along Robb and Ledford Creeks. The principal waterfowl use is by mallards and teal. Nesting success and brood rearing sites for waterfowl will be improved by the rest rotation grazing system that has been implemented on the WMA.

FISHERIES

The WMA contains portions or all of Crows Nest, Ledford, Robb, Rock, Swamp and Taylor Creeks. If grazing on the WMA is coordinated with BLM, Indian Creek and several miles of the East Fork of Blacktail Creek may also be influenced by the grazing system that is implemented.

Ledford Creek supports rainbow, rainbow-cutthroat hybrids, brown trout and mottled sculpin. Based on an inventory in 1991, total densities of trout were estimated at approximately 240 per mile. Brown trout were the predominant species representing 74% of the catchable (6 inches or longer) fish. Habitat was limited in the inventoried section, due to a low abundance of willows and other shrubs in riparian areas. Stream and riparian conditions appeared to have been influenced by historic livestock use.

The East Fork of Blacktail Creek fishery is primarily comprised of brook and rainbow trout. Mountain whitefish and mottled sculpin are also present. In 1995, a short section of stream was inventoried downstream of the mouth of Rough Creek. Brook trout were the only trout species captured. Sizes ranged from 4 to 9 inches and densities were very low, estimated at 66 per mile.

Westslope cutthroat trout (WCT) are present in the headwaters at similar densities. Analysis of several fish indicated they were 88% genetically pure. Instream flow reservation was requested and granted at 18 cubic feet per second.

Robb Creek is dominated by brook trout, but maintains a small population of WCT. Mottled sculpin are also present. A survey in 1991 estimated catchable size fish at 496 per mile. Brook trout averaged nearly eight inches in length, with the largest exceeding 12 inches. Westslope cutthroat trout averaged only 6% of the game fish population. Sizes ranged to 9 inches in length. Habitat in the surveyed area consisted primarily of a network of beaver ponds connected by short reaches of stream. The majority of habitat was provided by the ponds or woody debris associated with the dams. Livestock impacts had influenced portion of the inventoried stream reach.

Rock Creek contains exclusively WCT. Population densities range from 160 to 300 catchable size fish per mile, with the largest fish exceeding 12 inches in length. Fish habitat is limited throughout most of the stream. Two reservoirs appear to provide over-winter habitat to a significant portion of the population. Primary factors influencing the habitat include the outlet of the upper reservoir, which has eroded a 15 foot gully for approximately 200 yards. This has largely obliterated habitat features for a significant distance downstream. In addition, a natural slump has confined the channel resulting in steep, eroding banks, which continue to introduce high levels of sediment. Livestock are also impacting streambanks and riparian condition.

The genetic status of this population has not been adequately determined. Preliminary analysis of cutthroat collected in 1995 indicated this population was genetically pure. Subsequent fish collected in 1997 and analyzed in 1998 suggest that the population is either slightly hybridized or carries a rare WCT allele that is electrophoretically indistinguishable from that characteristic in Yellowstone cutthroats or rainbow trout.

Fisheries inventories have not been conducted on Crows Nest Creek, Taylor Creek, Swamp or Indian Creeks, thus their status as fisheries is not known.

Status of Westslope Cutthroat Trout in Montana

In June 1997, the Fish and Wildlife Service receive a formal petition to list WCT as threatened throughout its range. In January 1998 the Service received an amended petition, from the copetitioners, which contained a substantial amount of new information to support their requested action. The Fish and Wildlife Service will likely make a decision on WCT listing by July 1999.

Genetically pure populations of WCT presently occupy 2.9% of their historic distribution. A viability assessment on 144 populations (90 - 100% genetically pure) in the Upper Missouri River drainage was completed in 1996. Results indicated most populations are at a high risk of going extinct. Based largely on the results of this assessment and recommendations from the WCT Technical Committee, the Forest Service and Bureau of Land Management are giving stream habitats with slightly hybridized WCT populations (90 - 99% pure) the same emphasis as those supporting entirely pure populations. Similarly, the WCT Conservation Plan (in draft form,

but likely finalized within a couple of months) stipulates that 90 - 99% pure populations must be managed as pure until a watershed plan is formalized, defining conservation objectives. If that population or stream is not part of the specified objectives, management will revert back to sport fisheries status and emphasis will become similar to other streams with comparable recreational value.

It is unknown how hybridized populations will be viewed under the Endangered Species Act, if WCT becomes listed. Management direction defined by the WCT Conservation Plan or the Endangered Species Act has implications for Robb and Rock Creeks on the WMA.

NON GAME/PREDATORS/FURBEARERS

At present, there is no formal inventory of nongame, predators or furbearers for the WMA. Dennis Flath, statewide non-game coordinator, conducted an inventory of ferruginous hawks and prairie falcons beginning in the late 1970's and continued periodically since that time. The most recent information indicates that there are an estimated 5-10 pairs of ferruginous hawks and a few pairs of prairie falcons that occupy the WMA. Beaver are found in the major drainages.

SPECIES LISTS

The following listing of all game and nongame species that inhabit the WMA was prepared by Lonner in 1986.

BIRDS (57 SPECIES)

Northern Harrier (*Circus cyaneus)*
Sharp shinded hawk (*Accipiter striatus)*
Cooper's hawk (*Accipiter cooperii)*
Northern goshawk (*Accipiter gentilis)*
Red-tail hawk (*Buteo jamaicensis)*
Ferruginous hawk (*Buteo regalis)*
Rough-leg hawk (*Buteo lagopus)*
Golden eagle (*Aquila chrysaetos)*
American kestrel (*Falco sparverius)*
Prairie falcon (*Falco mexicanus)*

Blue grouse (*Dendragapus obscurus)*
Ruffed grouse (*Bonasa umbellus)*
Sage grouse (*Centrocerus urophasianus)*

Sandhill crane (*Grus canadensis*)
Killdeer (*Charadrius vociferus)*
Spotted sandpiper (*Actitis macularia)*
Long-billed curlew (*Numenius americanus)*

Great horned owl (*Bubo virginianus)*

Belted kingfisher (*Ceryle alcyon)*

Yellow bellied sapsucker (*Sphyrapicus varius)*
Hairy woodpecker (*Picoides villosus)*
Northern flicker (*Colaptes auratus)*

Horned lark (*Eremophila alpestris)*
Tree swallow (*Tachycineta bicolor)*
Violet-green swallow (*Tachycineta thalassina)*
N Rough-wing swallow (*Stelgieopteryx serripennis)*

Gray jay (*Perisoreus canadensis)*
Stellar's jay (*Cyanocitta stelleri)*
Clark's nutcracker (*Nucifraga columciana)*
Black billed magpie (*Pica pica)*
Common raven (*Corvus corax)*

Black-capped chickadee (*Parus atricapillus)*
Mountain chickadee *(Parus gambeli)*
Red-breasted nuthatch *(Sitta canadensis)*
Brown creeper (*Certhia americana)*

Bohemian waxwing (*Bombycilla garrulus)*
Northern shrike (*Lanius excubitor)*
European starling (*Sturnus vulgaris)*

Yellow warbler (*Dendroica petechia)*
Yellow-rumped warbler (*Dendrocia coronata)*
Macgillivray's warbler (*Oporornis tolmiei)*
Common yellowthroat (*Geothlypis trichas)*

Western tanager (*Piranga ludoviciana)*

American tree sparrow (*Spizella arborea)*
Chipping sparrow (*Spizella passerina)*
Vesper sparrow (*Pooecetes gramineus)*
Song sparrow (*Melospiza melodia)*
White-crowned sparrow (*Zonotrichia albicollis)*
Dark-eyed junco (*Junco hyemalis)*

Western meadowlark (*Strurnella neglecta)*

Brewer's blackbird (*Euphagus cyanocephalus)*

Rosy finch (gray*) (Leucosticte arctoa)*

Rosy finch (black) (*Leucosticte arctoa*)
Pine grosbeak (*Pinicola enucleator)*
Cassin's finch (*Carpodacus cassinii)*
White-winged crossbill (*Loxia leucoptera)*
Pine siskin (*Carduelis pinus)*

LARGE MAMMALS

Black Bear (*Ursus americanus*)
Mountain Lion (*Felis concolor*)
Elk (*Cervus elaphus*)
Mule Deer (*Odocoileus hemionus*)
White-tailed Deer (*Odocoileus virginianus*)
Moose (*Alces alces*)
Pronghorn Antelope (*Antilocapra americana*)

AMPHIBIANS

Boreal (Western) Toad (*Bufo boreas*)
Spotted Frog (*Rana pretiosa*)

REPTILES

Rubber Boa (*Charina bottae*)
Common Garter Snake (*Thamnophis sirtalis*)

SMALL MAMMALS (26 SPECIES)

Masked Shrew (*Sorex cinereus*)
Montane Shrew (*Sorex monticola*)
Small-footed Myotis (*Myotis subulatus*)

Little Brown Myotis (*Myotis lucifugus*)
Long-legged Myotis (*Myotis volans*)
Pika (*Ocotona princeps*)
Nuttall's Cottontail (*Sylvilagus nuttallii*)
Snowshoe Rabbit (*Lepis Americanus*)
White-tailed Jackrabbit (*Lepus townsendii*)
Least Chipmunk (*Eutamias minimus*)
Yellow-pine Chipmunk (*Eutamias amoenus*)
Yellow-bellied Marmot (*Marmota flaviventris*)
Uinta Ground Squirrel (*Spermophilus armatus*)
Red Squirrel (*Tamiasciurus hudsonicus*)
Northern Pocket Gopher (*Thomomys talpoides*)
Deer Mouse (*Peromyscus maniculatus*)
Busy-tailed woodrat (*neotoma cinerea*)
Gapper's Red-backed Vole (*Clethrinomys gapperi*)
Western Jumping Mouse (*Zapus princeps*)
Porcupine (*Erethizon doratum*)
Coyote (*Canis latrans*)
Red Fox (*Vulpes vulpes*)
Long-tailed Weasel (*Mustela frenata*)
Badget (*Taxidea taxus*)
Stripped Skunk (*Mephitis mephitis*)
Bobcat (*Lynx rufus*)

FISH

Rainbow Trout *(Oncorhynchus mykiss)*
Westslope Cutthroat Trout *(Oncorhynchus clarki lewisi)*
Rainbow - Cutthroat (trout) hybrids *(NA)*
Brown Trout *(Salmo trutta)*
Brook Trout *(Salvelinus fontinalis)*
Mottled Sculpin *(Cottus bairdi)*
Mountain Whitefish *(Prosopium williamsoni)*

GAME ANIMAL DEPREDATION

Private landowners in the Robb/Ledford area were concerned with the effects of elk on their ranching operations prior to the acquisition of the WMA. Since that time, some complaints still occur but they are minimal. In addition, the adjacent private land with the greatest potential for game damage complaints is not presently open to public hunting. Antelope and both species of deer use hayfields and haystacks on this private land.

ZONE OF INFLUENCE

The WMA has a far reaching zone of influence. Hamlin and Ross (1992) report elk radioed on the WMA are distributed widely throughout the Gravelly Range during the summer. Also, with the winter range providing for mule and whitetail deer and antelope, the WMA has a far reaching influence for these species as well. Game bird species are year around residents of the WMA.

MINERAL-OIL/GAS

At present there are no mining, oil or gas activities on the WMA. The majority of the mineral rights and oil and gas leasing rights are under federal government jurisdiction. However, when FWP purchased the property, 51.52% of the private mineral rights were also assigned to FWP. The potential for exploration exists. Requests will be considered as received in compliance with the Montana Environmental Policy Act and cooperatively with the BLM. DNRC land (approximately 10,000 acres) associated with the WMA is leased for agricultural purposes only and FWP has no control over minerals.

LIVESTOCK GRAZING

Livestock grazing on the WMA is and will continue to be conducted under a rest-rotation grazing system incorporating the principles developed by Hormay (1970). This system involves the grazing of cattle through each pasture on a three year rotation of early use (mid-June to seed ripe mid-August), late use (seed ripe to October), and then complete rest.

Presently, the status of this grazing system and coordination with adjacent public land managing agencies (USFS, BLM) is not finalized. In 1999 and 2000, FWP will be completing a planning process, which will develop a long term grazing management plan based on the objectives developed for the WMA listed on page 13. In addition, FWP intends to enter into an “exchange of use” agreement with DNRC lands leased to the Association in order to manage a 3,600 acre inholding within the WMA for habitat protection.

LIVESTOCK WATER DEVELOPMENTS

Approximately 14 miles of water lines supplied by two separate springs make up a complex and lengthy pipeline system that flows into 17 tanks for livestock water. This network of pipes and tanks are crucial to the success of an efficient livestock grazing program on the WMA. Many areas of the WMA which include the lower reaches of the Dry Hollow drainage and high ridges that separate Ledford Creek from Robb Creek, Robb Creek from Dry Hollow and Dry Hollow from Spring Brook have no water that is naturally available to livestock through the grazing season. In addition to supplying water where none is available, water tanks placed in the appropriate locations will increase the opportunity to disperse livestock throughout the pasture system and reduce the grazing pressure in riparian areas.

HOGBACK SPRING

This spring, it's development and water line starts on land that is owned by the United States Forest Service. This line initially feeds two tanks on the Forest Service pasture then continues ½ mile to the north before crossing the boundary of the WMA. This water line will then continue north along the top of the ridge between Robb Creek and Ledford Creek for a total of three miles feeding water to four tanks.

At this time the complete system is in very poor condition, which includes the development at the spring box. A cooperative effort between FWP and the U.S. Forest Service to improve and re-build this line will need to be initiated.

KELLY SPRING

There are two separate water lines that originate from Kelly Spring. One line feeds a series of tanks along the ridge between Dry Hollow and Robb Creek ending to the north on land owned by the Snowcrest Ranch.

On the WMA this line is approximately five miles long and supplies water to seven different tanks. A separate line from Kelly Spring feeds water initially to the west then runs north along the ridge between the Spring Creek drainage and Dry Hollow. This line is approximately six miles long and supplies water to six tanks. In addition to supplying livestock water to the WMA pastures, this line also is used by three other landowners for their grazing programs.

The Kelly Spring lines and tanks are in very poor condition and are in need of major replacement. As we design a new pasture system, tanks will need to be added to the line to improve our opportunity to disperse livestock.

Currently the NRCS located in Sheridan has been organizing the landowners that use the Kelly Spring to combine their efforts to rebuild the complete water system. FWP has been an active participant in this effort since its beginning. Necessary for the success of the project will be the completion of a memorandum of understanding for the common use of the water right from Kelly Spring.

FIRE PROTECTION

The Robb/Ledford WMA is split between two counties. Beaverhead County on the west and the eastern part of the WMA lies in Madison County. Protection for the WMA falls within the State-County Fire Protection Agreement. First responders to a fire on our project would be with the appropriate county areas depending on where the fire was. If a fire becomes too large for county areas to handle or if the fire expands outside of the county jurisdiction then the DNRC, Fire Management out of Dillon, will be called in for assistance.

NOXIOUS WEED MANAGEMENT

Since the purchase of the WMA in 1988, FWP has been actively involved in the control of noxious weeds on our lands. Noxious weeds that have been identified on the WMA include: Spotted Knapweed, Canadian Thistle, Field Scabiosa, Blackleaf henbane, Hounds Tongue, Musk Thistle and Mullen. The largest and most dispersed infestation of noxious weed type is Hounds Tongue. The other varieties are found in smaller amounts and no Leafy Spurge has been identified on the WMA.

Our efforts to date have initially been to treat the roadsides where infestations are first started and most abundant, then to work out into surrounding rangelands. Weed control has been accomplished with the use of chemicals, specifically Tordon, both with contract (private applicators) and FWP personnel and equipment.

FWP intends to continue and expand its commitment to control noxious weeds. New infestations will be identified and treated as quickly as possible and other areas of previous treatment will be revisited. Budgets will determine how much of an effort we can have from year to year to manage weed infestations that are located in more dispersed and isolated locations.

TIMBER MANAGEMENT

No timber management activities are planned on the very limited forested portions of the WMA. Just prior to acquisition, the former owners were considering some harvest in the Taylor creek drainage on the south end of the WMA. Department acquisition of the WMA prevented harvest of this important fall security and winter thermal cover.

RECREATION

A significant number of elk hunter days occur on or adjacent to the WMA. While no quantitative data exists specific to the WMA, a survey of the number of opening day hunter camps through 1990 on the adjacent East Fork Blacktail Deer Creek is as follows:

Year:	1978	979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Camps:	71	79	85	37	56	51	98	67	82	121	105	--	94

The WMA is located in Hunting District 324. Recreation hunting pressure is high, with approximately 2400 elk hunters recreating for 13,025 days annually.

The deer population provides hunting recreation in district 324, which has approximately 1650 hunters for 8835 days annually.

There is a significant amount of antelope hunting recreation that is provided on the WMA and for the district as a whole recreation is provided for approximately 1155 hunters and 2385 hunter days annually.

WATER MANAGEMENT

With the purchase of the WMA, FWP acquired 22 water rights, consisting of one stock watering right and 21 irrigation rights. The sources for the irrigation rights are Ledford, Robb and Warm Springs creeks and a tributary spring to the W. F. Ruby Creek. During the first stage of the ongoing statewide water adjudication, objections to 15 of FWP's claimed rights were filed in 1991. One objection (by the BLM) has been resolved. Fourteen objections, which were filed by a former owner of property adjacent to the WMA, are now the jurisdiction of the DNRC. Issues raised in the objections have not been completely resolved as yet.

WMA MANAGEMENT PROGRAM

STATEMENT OF PURPOSE:

Robb/Ledford Wildlife Management Area (WMA) (Figure 1) was purchased in 1988, primarily to provide winter range for elk. Additionally, the WMA was purchased to provide habitat for other plant and wildlife species that are products of the local soils and climate.

Purchase Price:	$1.82 million
Total Cost:	$1.99 million
Percent Federal Aid (PR):	0%
Percent State License (HB526):	100%

GOAL

The goal for the WMA is to maximize the productivity of the soil, vegetation, and watershed and the game and nongame wildlife that are products of that environment. A secondary goal will be to provide public access to these and adjacent public properties (BLM, DNRC and USFS) for sport hunting and other recreational pursuits. Management emphasis is to attain stated Management Objectives (below) which includes maximizing soil/vegetation interrelationships that will result in a productive environment for all wildlife species. Secondary management emphasis will be to meet Region Three objectives for big game species, upland game bird and nongame species management plans. Livestock grazing will be used as a tool to help achieve wildlife and vegetative objectives.

PROBLEMS

1. Several miles of sheep tight fence exists that is a major deterrent to movements of antelope, one of the primary inhabitants of the WMA yearlong.

2. Several miles of unnecessary cross fence and small interior pasture fences exist which create livestock distribution and resource damage problems.

3. Livestock grazing is presently utilizing pre-existing pasture fences, which has created management problems.

4. Elk traditionally use private lands adjacent to the WMA as winter range.

5. Perception by some that WMA is only an elk winter range, and that FWP does not manage for a diversity of wildlife species and vegetative communities.

6. Some adjacent private lands are closed to hunting.

7. Potential for subdivision adjacent to the WMA.

8. Public roads (county) pose problems with restricting public use on the WMA in the winter.

9. Increased public use of the WMA will require road and gate maintenance and improvement.

10. Potential listing of westslope cutthroat trout under Endangered Species Act may require more intensive management of riparian areas.

ROBB/LEDFORD WMA OBJECTIVES

OBJECTIVE 1. Manage the vegetation to allow succession toward climax vegetative communities and the potential natural vegetation as determined by soil types and climate. Specifically, uplands would be managed as Idaho Fescue and Bluebunch Wheatgrass communities. Riparian sites would be managed for the maintenance and improvement of willow communities and bank stability.

ISSUE 1: Vegetation needs to be allowed adequate rest periods for health and vigor. The continuation of livestock use of the WMA would be required to attain Objectives 2 & 3 (below). Properly managed livestock grazing can be utilized to attain Objective 1.

Strategy 1: Utilize livestock grazing on the WMA as designated by a management plan and under a rest-rotation system that would allow plants two years of growing season rest to achieve and/or maintain health and vigor. Each pasture will be rested during the growing period two out of every three years with one of the pastures being totally rested (year long).

Sub-Strategy 1: Address concerns related to livestock concentrations by: water developments, salting, herding, pasture layout and timing of use.

Sub-Strategy 2: Address problem related to potential larkspur poisoning to livestock by the use of medicated feeds (Silent Herder), limited used of electric fencing, pasture layout and timing of livestock movements.

ISSUE 2: Noxious weeds occur on the property.

Strategy 1: Control noxious weed infestations when they are found to occur as outlined in the Region 3 WMA Weed Control Management Plan.

Strategy 2: Require that any livestock utilizing the WMA grazing system (that will be given hay before arriving on the game range) be fed only "weed free" hay at least two weeks prior to the "on date."

ISSUE 3: Documenting success of reaching vegetative objectives.

Strategy: Monitor grass and shrub species by permanent photo and/or other physical measurements to ensure health, vigor and plant succession is moving toward desired conditions as noted in Objective 1. Employ the assistance of the Montana Riparian Association to assist in this effort.

OBJECTIVE 2. Expand the benefits of managing the deeded WMA land as wildlife habitat to adjoining DNRC Land.

ISSUE 1: The Ledford Creek Grazing Association has the grazing rights to the 3,620 acres of DNRC property (McGuire) found within the boundaries of the WMA with a

rated carrying capacity of 1059 AUMs. The McGuire property is important elk winter range and wildlife habitat.

Strategy: Enter into an exchange of use, whereby the Association is allowed to graze livestock on the WMA in return for FWP being allowed to include the McGuire in the management of the WMA.

ISSUE 2: FWP presently leases over 10,000 acres of DNRC land associated with the WMA. This land is important wildlife habitat and an intregal part of the WMA. The cost of leasing DNRC land will continue to increase and could eventually be cost prohibitive.

Strategy: Continue to lease the grazing rights to the Association to help cover the cost of the lease, upkeep and improvements. The lease would allow FWP to maintain management of these lands.

OBJECTIVE 3. Showcase the WMA as a demonstration area where both wildlife and livestock can co-exist in a rest-rotation grazing system that will allow for the maintenance of a healthy range ecosystem.

ISSUE 1: Wildlife and livestock both require the perpetual maintenance of a healthy rangeland ecosystem for their long-term existence. Both compete for similar resources. These resources exist on both private and public land throughout the state (65% of which is private).

Strategy 1: Implement a livestock rest-rotation system on the WMA that will meet the needs of wildlife, livestock and the rangeland resource.
Strategy 2: Use the anticipated success of this partnership between the wildlife and ranching community for educational purposes in tours and presentations for public and private land managers and the general public.

OBJECTIVE 4. Provide an adequate amount of vegetation across the entire WMA annually to supply the winter forage requirements of elk (as designated in the Elk Management Plan) and to reduce elk depredation on neighboring private land.

ISSUE 1: Providing adequate amounts of highly palatable residual forage on the WMA to meet the needs of wintering elk.

Strategy: Use rest-rotation grazing to manage vegetation to keep it more palatable for elk forage and provide adequate amounts of total forage for elk by each year resting one-third of WMA that is under grazing management.

ISSUE 2: Provide adequate winter elk forage distributed throughout the WMA.
Strategy 1: Design pasture layout to provide for the best distribution of habitat values across the WMA (i.e. annual rest pasture distribution).
Strategy 2: Utilize a conservative stocking level (based on approximately 6 acres/AUM).

ISSUE 3: Documenting the success of leaving an adequate distribution of residual vegetation for wintering elk throughout the WMA.

Strategy 1: Utilize a method or methods (qualitative or quantitative) of determining if an adequate distribution of residual vegetation remains after livestock use. The type of method (visual determination, photo plots, agronomy cages, etc.) used for a particular site will vary dependant on management concerns and objectives.

OBJECTIVE 5. Provide for the cover, forage and water quality needs for other fish and wildlife species using the WMA. For example, residual cover is important for ground nesting birds and small mammals. Shrubby vegetation such as sagebrush is important for cover, nesting and forage for a number of wildlife species. Riparian vegetation is critical to maintain fisheries and wildlife values.

ISSUE 1: Loss of residual vegetation due to livestock grazing .

Strategy 1: Design the grazing system to provide vegetation rested from livestock grazing on one-third of the WMA each year. An additional one-third of the pastures will be rested until seed-ripe (mid-August).
Strategy 2: Utilize a conservative stocking level (based on approximately 6 acres/AUM) in an effort to maintain a distribution of residual forage for all wildlife, including non-game species in pastures utilized by livestock.
Strategy 3: Design pasture layout to accommodate desired wildlife habitat distribution across the WMA.
Strategy 4: Utilize a method or methods (qualitative or quantitative) to determine if an adequate distribution of residual vegetation remains after livestock use. The type of method (visual determination, photo plots, agronomy cages, etc.) used for a particular site will vary dependant on management concerns and objectives.

ISSUE 2: Maintain adequate stream function and riparian habitat necessary to promote an abundance of wild trout representing a spectrum of age classes and where appropriate, ensuring Westslope Cutthroat conservation objectives are met.

Strategy 1: Use rest-rotation grazing to provide for improvement of stream side riparian habitats critical to fisheries and the cutthroat trout.
Strategy 2: Consider the use of herding to manage livestock in some areas in conjunction with the rest-rotation system.
Strategy 3: Develop pipelines and water tanks to facilitate proper cattle distribution away from riparian areas.
Strategy 4: Adjust grazing plan where necessary to consider Westslope Cutthroat trout concerns.

OBJECTIVE 6. Enhance wildlife benefits on adjacent lands where feasible, through cooperative agreements with State and Federal landowner(s).

ISSUE: Habitat for a variety of wildlife species including elk winter range is found on adjacent public land.

Strategy 1: Where advantageous for the management of the WMA and wildlife objectives, consider the incorporation the adjacent Federal allotment(s) and additional DNRC leases.

OBJECTIVE 7. Manage public access to provide a diversity of wildlife and fishery related recreational opportunities.

ISSUE: Distribute public use with minimal impact on land, fisheries and wildlife.

Strategy 1: Maintain an adequate road system to allow public use of the WMA without causing excessive use, sedimentation or off-road travel.
Strategy 2: Install cattle guards and improve the roadway where necessary for safety purposes.
Strategy 3: Exclude public use of the WMA during the winter to prevent disturbance to big game. Request the County Commission seasonally close the county roads on the game range during the winter if significant conflicts develop between winter big game and recreational use.

OBJECTIVE 8. Provide for aesthetics along riparian zones and uplands.

ISSUE: How to minimize human related impacts on the WMA.

Strategy 1: Maintain a conservative stocking rate in order to allow a distribution of residual vegetation in portions of the Ause≅ pastures that will provide a degree of wildlife forage and cover. A conservative grazing rate of approximately 6 acres per AUM will be a starting point to establish an initial level. Further adjustments could be made either upward or downward based on monitoring results related to objectives.
Strategy 2: Remove unneeded fencing.
Strategy 3: No off-road travel.
Strategy 4: Layout fences to minimize livestock concentrations and heavy trailing scars.
Strategy 5: Consider the exclusion of livestock from some locations of high public use such as the trailhead/camping area at the end of the road on Ledford Creek.
Strategy 6: Salt blocks and water tank placement should be placed away from open public roads and water.

OBJECTIVE 9. Increase public awareness and appreciation for the diversity of wildlife, fisheries and plant communities present on the Robb/Ledford WMA.

ISSUE: How to educate the public on the purpose and use of the WMA.

Strategy 1: Placement of educational signs in some locations, media releases and/or a brochure.
Strategy 2: Educational field tours.

REFERENCES

Hamlin, K. L., and Ross, M. S. 1996. Elk Population dynamics and breeding biology. Montana Fish, Wildlife & Parks, Helena. Federal Aid Job Project Report, Project W-120-R-27.

Hamlin, K. L., and Ross, M. S. 1992. Elk Population dynamics and breeding biology. Montana Fish, Wildlife & Parks, Helena. Federal Aid Job Project Report, Project W-120-R-23. 27 pp.

Hormay, A. L. 1970. Principles of rest-rotation grazing and multiple use land management. U.S. Forest Service Training Text No. 4 (2200), US Government Printing Office, 19700-385-056. 25 pp.